

REMARKS

This paper is submitted in response to the Office Action mailed May 13, 2003.

Following this amendment, claims 1, 2, and 4-10 are pending. Claim 1 has been amended to incorporate the subject matter of Claim 3 and Claim 3 has been cancelled. Claims 11 and 12 have been cancelled, without prejudices pursuant to a restriction requirement. Since support for the amendments can be found throughout the specification and claims as originally filed, there is no new matter added as a consequence of the amendments to the claims.

Restriction Requirement

Applicants affirm, with traverse, the election of Claims 1-10 drawn to a lubricating composition. Applicants reserve the right to file the subject matter of Claims 11 and 12 in a divisional application.

The Rejections under 35 U.S.C. § 103(a) Should Be Withdrawn

Claims 1-10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Conger et al. (US 4,036,765; "Conger") in combination with Kuan et al. (US 4,045,362; "Kuan"). The Examiner states that Conger discloses a lubricant for use in a pneumatic tire wheel assembly containing a run-flat device to permit the tire to run at least 50 miles at 50 mph in the deflated condition. The Examiner alleges that Conger discloses a lubricant composition comprising a mixture of fatty acid and a carrier, such as water or a polyol including glycerol. The Examiner acknowledges that Conger does not disclose a polysaccharide such as xanthan gum.

The Examiner states that Kuan discloses a lubricant for a pneumatic tire and wheel assembly where the lubricant functions primarily when the tire is being operated in the flat condition. The Examiner alleges that Kuan discloses a lubricant composition comprising water and polyols such as ethylene glycol as the carrier, and comprising small amounts as additives of a polyethylene oxide, a polysaccharide and other materials such as cellulose fibers. The Examiner also argues that Kuan discloses the addition of polysaccharide in an amount of 0.05 to 4 parts by weight. The Examiner further alleges that it would have been obvious to one of skill in the art to “have added the polysaccharide component of Kuan to the tire lubricant of Conger if the additives known imparted properties were so desired.” Applicants respectfully traverse the rejection.

The Present Invention

The present invention concerns a tire lubricant usable for lubricating an interface between a tire and a safety support mounted on a wheel rim within said tire, and a mounted assembly for an automobile provided with said lubricating composition. As amended, Claim 1 concerns a lubricating composition comprising (a) a lubricating agent, wherein said lubricating agent is aqueous or nonaqueous and (b) a polysaccharide, where the lubricating agent comprises glycerine in a mass fraction equal to or greater than about 60% of the lubricating agent, said lubricating agent being present in said composition in a mass fraction of between about 95% and 99%, and where the polysaccharide is present in said composition in a mass fraction of between about 1% and 2%. The polysaccharides function as a thickening agent in the presently claimed composition. The presently claimed composition is a thixotropic gel which is capable of becoming liquid under agitation or by compression, and regenerating itself into the solid state

when at rest. Thus, the lubricant of the present invention becomes flowable when the tire is subjected to reduced or zero pressure due to a flat tire and functions to reduce friction between various internal parts of the tire, preventing potential damage to internal tire parts. The lubricant of the present invention also allows the tire to run at least 300km at a speed of 80km/h (specification; paragraph 66).

Conger Does Not Disclose the Present Invention

Conger does not disclose a tire lubricant comprising a lubricating agent and a polysaccharide as a thickener. The lubricant of Conger comprises four components : a fatty acid, metal soap, a carrier, and silica. Rather than polysaccharide, silica is used as the thickening agent (See col. 4, lines 3-11). Conger also does not disclose the use of any other thickeners which may be used in place of silica. Thus, Conger fails to teach or disclose a polysaccharide present in a mass fraction of between about 1% and 2%.

The lubricant disclosed by Conger cannot be used for the purposes of the present invention. The lubricant of Conger is a thermoreversible gel which is nonflowable below 70°C and flowable at temperatures higher than 90°C (See Claim 1). Thus, the disclosed gel has the disadvantage of being sensitive to temperature fluctuations. The reversability of gel states with fluctuating temperatures conflicts directly with the desired property of thixotrophy exhibited by the presently claimed compositions. The lubricant of Conger, thus, cannot be used in the same manner as the presently claimed composition, since the lubricant becomes flowable at temperatures higher than 90°C, rather than upon agitation as in the presently claimed composition. The addition of polysaccharide in a mass fraction of between 1-2% as presently claimed would not alter the thermoreversible gel of Conger into the thixotropic gel of the

present invention.

The tire lubricant of Conger permits the tire containing the lubricant to run at least 50 miles at 50m/hr in the deflated condition (See Conger abstract). In contrast, the tire comprising the lubricant of the present invention can run-flat for at least 300km (or 183 miles) at a speed of 80km (50m/hr), which far exceeds the capacity of the tire using the lubricant taught by Conger.

Kuan Does Not Disclose the Present Invention

Kuan also does not disclose a tire lubricant of the present invention. Kuan is directed to tire lubricant for a run-flat tire based on the following components: a water/ethylene glycol mixture, polyethylene oxide, polysaccharide and cellulose fibers. Kuan fails to disclose a lubricating composition comprising a lubricating agent wherein the lubricating agent comprises glycerine.

Furthermore, the lubricant taught by Kuan is not nearly as effective as the presently claimed lubricant. Kuan discloses that about 450 grams of the lubricant is used for each tire (Kuan; col. 5, line 60), whereas the presently claimed lubricant can be used in very small amounts, e.g. 60 grams (present specification; paragraph 48).

Applicants also note that Kuan discloses a broad range in the amount of polysaccharide that may be added to the compositions, i.e. 0.05 to about 4 parts by weight. Examples disclosed by Kuan utilize only 0.15 parts of the polysaccharide Kelzan (Kuan; Table V). In contrast, the presently claimed lubricant contains a very specific amount of polysaccharide in the lubricating composition, i.e., a mass fraction of the composition of between 1% and 2%. Since the working examples in Kuan do not teach the amount of polysaccharide presently claimed, Applicants submit that Kuan does not satisfy the deficiency from the disclosure of Conger.

The Cited Art Does Not Provide a Motivation to Combine

Applicants also submit that there is no motivation to combine Conger and Kuan. Kuan clearly teaches away from the use of glycols or triols, especially glycerol (Kuan; col. 1, lines 48-53) and Conger concerns lubricating compositions comprising glycerol. Thus, one of skill in the art would not be motivated to combine the two references.

In addition, Applicants disagree with the Examiner's contention that it would have been obvious to one of skill in the art to add the polysaccharide from Kuan to the tire lubricant of Conger if the additives known imparted properties were so desired. Kuan teaches a composition having a "puncture-sealing" property due to the components found in the composition (See col 3, lines 54-55) due to the presence of the polysaccharide, which improves the dispersion of cellulose fibers in the solution (see col 5, lines 44-52). Thus, the polysaccharides in Kuan serves to promote a uniform distribution of fibers, not to thicken the composition as used in the present invention. Therefore, one skill in the art, upon review of the cited references, would not be motivated to add the polysaccharide from Kuan to the lubricant composition of Conger to arrive at the claimed invention.

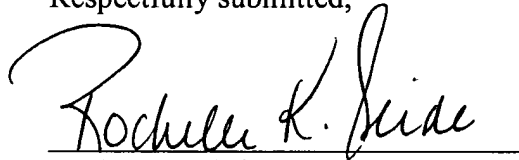
For the foregoing reasons, Applicants submit that Claims 1, 2 and 4-10 are patentable over Conger in combination with Kuan and request withdrawal of the rejection of the claims under 35 U.S.C. § 103(a).

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully request withdrawal of the outstanding rejections and allowance of the pending claims.

Applicants request a two month extension of time and enclose herewith the requisite fee as set forth in 37 C.F.R. § 1.17(a)(2). Applicants do not believe that any additional fee is required in connection with the submission of this document. However, should any fee be required, or if any overpayment has been made, the Commissioner is hereby authorized to charge any fees, or credit or any overpayments made, to Deposit Account 02-4377. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Rochelle K. Seide", written over a horizontal line.

Rochelle K. Seide
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Enclosures